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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/520,684

03/07/2000

Jonathan S. Turner

27776

9090

26327

7590

08/18/2004

THE LAW OFFICE OF KIRK D. WILLIAMS  
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EXAMINER

VOLPER, THOMAS E

ART UNIT

PAPER NUMBER

2665

15

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/520,684

Applicant(s)

TURNER ET AL.

Examiner

Thomas Volper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 24, 25, 28-30 and 33-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24, 25, 28-30 and 33-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Response to Arguments***

1. Applicants' arguments filed 8 June 2004 have been fully considered but they are not persuasive.
2. In response to Applicants' argument that Fan neither teaches nor suggests *identifying that not one of said data packets has associated therewith the earliest timestamp value*, the Examiner respectfully disagrees. Fan teaches a second stage that receives time-stamped cells from the first stage (col. 5, lines 61). These time-stamped cells include data cells, of course, as well as the RT cells (col. 5, lines 50-55) that the Examiner holds to meet the limitation of a floor indication. The second stage examines the time stamps and chooses the cell with the earliest time stamp value to be read out of the input buffers at the second stage (col. 6, lines 16-40). The input buffers may contain a mix of data cells and RT cells, either of which may be the type of the chosen cell with the earliest time stamp value. The RT cell acts as a temporal marker and has the effect of maintaining cell sequence integrity by making sure that no data cells are forwarded ahead of their respective positions in the cell sequence. Applicants state that Fan handles RT and data cells the same, so it does not teach the identifying step mentioned above. Even though the selector indiscriminately chooses a cell from the input buffers with the earliest time stamp, if an RT cell is determined to have the earliest time stamp this is effectively equivalent to *identifying that not one of said data packets has associated therewith the earliest timestamp value*.

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3. In response to Applicants' argument that Fan does not teach the claimed improvement because if an RT cell is selected prior to a data cell and forwarding of data cells is stopped for the remainder of the current cell time (as stated in the Office action), the performance of the switch would greatly be reduced, the Examiner respectfully disagrees. Nowhere in the previous Office action does the Examiner state that data cell forwarding is stopped for the remainder of a current cell time. In fact, the Examiner states that there is time within a current cell time to discontinue data cell forwarding, if a data cell does not have the earliest cell time, and then to resume data cell forwarding, if in a next time slot a data cell has the earliest cell time (see paragraph regarding claims 25 and 30).

4. In response to Applicants' argument that if a buffer (31) becomes empty, it will not be filled from a previous stage cell until the next cell time, the Examiner respectfully disagrees. Fan teaches that an empty buffer condition in an output buffer triggers a RT cell to be sent per time slot, not cell time (col. 7, lines 18-37). In this way, Fan prevents an empty buffer condition from existing in the arrival buffers of the next stage by supplying an RT cell to the output of a previous stage when no data cell is available to be sent. As stated in the previous Office action, the RT cell meets the limitation of a floor indication. Thus by sending an RT cell from an output buffer of the first stage to the arrival buffer of the second stage, this meets the limitation of adding a new floor indication to the arrival buffer, as in the present invention. It is possible that an arrival buffer in the second stage becomes empty because the last cell in that particular buffer is forwarded through the switch of the second stage at a particular time slot within a cell transfer time. However, even if there is no data cell in the associated output buffer of the

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first stage, a RT cell will be sent in the next time slot thus adding a new floor indication to the arrival buffer. This meets the limitation *if said removing causes the arrival buffer to become empty, in response adding a new floor indication to the arrival buffer.*

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 24, 25, 28-30 and 33-37 rejected under 35 U.S.C. 103(a) as being unpatentable over Fan (US 5,337,308).

Regarding claims 24, 28, 29, 33, 34 and 36, Fan discloses a multi-stage switching system that uses sequence control. Fan discloses receiving time stamped cells at second stage switching modules (16) and queuing these cells at input buffers (31) (col. 6, lines 15-19). These cells include reference time stamp (RT) cells that are produced at the first stage if an output buffer at the first stage is empty (col. 5, lines 47-55). These RT cells represent the floor indications of the present invention, and all the other cells received at the arrival buffers of the second stage represent the data packets of the present invention. Fan also discloses that a minimum time stamp (TS) value detector (34) examines the cells at the input buffers to determine one or more cells having the earliest time stamp value (col. 6, lines 19-24). If an RT cell is selected based on having the earliest time stamp value at a particular time, it is equivalent to discontinuing forwarding of a data packet during a current cell time, as in the present invention, since a data cell will not be sent

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unless it has the earliest time stamp value. Fan does not expressly disclose adding a new floor indication to an input buffer if removing a data cell from that input buffer would cause the arrival buffer to become empty. However, Fan does disclose that the first stage includes an empty buffer detector (22) that detects empty output buffers of the first stage and informs RT cell generator of a "no cell condition" and supplies an RT cell to the output link (col. 5, lines 47-55). In this way, the output buffers of the first stage never become empty, since if no data cell is present to send, an RT cell is sent. This effect is transferred to the second stage, where an arrival buffer would never become empty because an RT cell would be arriving at an input buffer where otherwise no data cell would be inputted. An arriving RT cell meets the limitation of adding a new floor indication to an arrival buffer. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add this new floor indication to an input buffer of Fan, where the input buffer would otherwise become empty. One of ordinary skill in the art would have been motivated to do this to provide the minimum time stamp detector a reference time stamp value to use in comparison with all the other input buffers for deciding which cell contains the earliest time stamp value.

Regarding claims 25, 30, 35 and 37, Fan discloses that the process of selecting a cell based on earliest time stamp value occurs N times during a cell transfer time (col. 6, lines 25-39). Thus, it is possible for one RT cell to be sent, which is equivalent to discontinuing data cell forwarding, and for one data cell to be forwarded within one cell transfer time.

*Conclusion*

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Thomas E. Volper



August 13, 2004



HUY D. VU  
SUPERVISORY PATENT EXAMINER  
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